IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

HANS-PETER WEITZEL

Group Art Unit: 1714

Examiner: Peter A. Szekely

Serial No.: 10/684,741

Filed: October 14, 2003

For: WATER-REDISPERSIBLE POLYMER POWDER COMPOSITIONS WITH ACCELERATED-SETTING ACTION

Attorney Docket No.: WAS 0608 PUS

DECLARATION OF DR. HANS-PETER WEITZEL

Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

Sir:

I, Dr. Hans-Peter Weitzel, do hereby declare and state as follows:

1. I obtained my Ph.D in Chemistry in 1990 from the Universität Mainz and the Max-Planck-Institute of Polymer Science, and first became employed at Wacker Chemie in 1991, in the Central Research Department of Wacker's research arm, the Consortium für Elektrochemische Industrie, GmbH. In 1995, I transferred to Wacker Chemie as a Research Chemist in the Polymers Business Division, where my work involved emulsions and dispersible polymer powders for the construction and coating markets. Since 2002, I have been Senior Manager and Group Leader for Innovation Management, Construction Polymers Business Unit, where I am responsible for development of emulsions and dispersible powders used in various applications including cementitious tile adhesives, grouts, self-leveling underlayments, renders, plasters, and coatings. I am a named inventor on some 39 different families of patent applications: US6127483; US6201062; US6441082; US6228937; US6300403; US6197871; US6187861; US6262163; US6590022; US6262167; US6566434; US6632861; US6656983; US6552120; US6531538; US6605663; US6576698;

US6890975; US6664322; US6710113; US6632869; US6734246; US6639049; US6706805; US6740692; US6770722; US 2004-0097622; US6809174; US2004-0097645; US2007-0037925; US2005-0014881; US2005-0250899; WO2005/058033; WO2005/118684; WO2006/061139; WO2006/072411; WO2006/072408; EP1792922; EP1788001; in addition to worldwide equivalents thereof.

2. I am the inventor of the subject matter of U.S. application Serial No. 10/684,741, and am familiar with the specification and claims of that application, the Office Actions received from the United States Patent and Trademark Office, and the art cited by the U.S. Examiner.

3. The claimed subject matter pertains to redispersible polymer powder compositions which accelerate the setting of cementatious compositions. This acceleration in setting is due to the combination of a water redispersible polymer powder and an alkanolamine accelerant, which are spray dried together with a protective colloid.

4. Compositions known as superplasticizers have been used for many years to retard, rather than accelerate setting of cementitious composites, as explained in the last paragraph of page 1 of the application specification. An Example of a commonly used superplasticizer is the use of phenolsulfonic acid-formaldehyde condensates. Use of superplasticizers or additional water to retard setting both result in adverse effects on the initial and final strength of the cementitious composition. The aim of the present invention was to accelerate, not retard, setting of cement.

5. Pakusch U.S. Patent 6,028,167 (*"Pakusch")*, Dreher U.S. Patent 6,716,922 ("*Dreher*"), and Columbet U.S. Patent 5,922,796 (*"Columbet")* all disclose use of compounds which retard, not accelerate cement setting. *Pakusch*, for example, describes phenolsulfonic acid/formaldehyde condensates as drying assistants for use in the spray-drying of polymer dispersions. However, as indicated previously, such condensates are retarders, not accelerants, and therefore one skilled in the art, desirous of producing a setting accelerant, would not use such compounds, which are also not within the scope of the claims, since the claims require an accelerant composition.

Dreher discloses polymer binders as would be used binding wood fibers and the like (see Examples), which contain a water insoluble polymer and 12.5 to 87.5% of a water soluble polymer of unsaturated carboxylic acid monomers. Such water soluble polymers are known in the art of cementitious compositions to be setting retardants, not accelerants. Thus, one skilled in the art would not be motivated to prepare a composition containing such polymers, which, even with alkanolamine, would be expected to retard rather than accelerate setting. It should be noted that the alkanolamine in the *Dreher* composition is a crosslinking agent which acts, at the elevated cure temperatures used by *Dreher*, to form ester bonds with the carboxyl groups of the carboxyl-functional soluble polymer.

Columbet discloses redispersible polymer powders, one use of which may be in hydraulic binders of the mortar or concrete type. *Columbet* discloses redispersible polymer powders for this use which contain water-insoluble film-forming polymer particles, considerable amounts of non-ionic polyether surfactant, and a polyelectrolyte which is a polymerized unsaturated carboxylic acid. As with *Pakusch* and *Dreher*, such polycarboxylic acid polymers are retarders, not accelerants, in cementitious compositions. Moreover, while Applicants' claims do not exclude adding non-ionic polyether surfactants, the latter, first, are generally waxy or liquid components which would interfere with the blocking behavior and free-flow qualities of a redispersible powder, and their use in cementitious compositions in disfavored, because the non-ionic surfactants, which are generally quite hydrophilic, would increase the water absorption of the cement. Finally, the composition of *Columbet* contains no protective colloid, nor could one be added without detracting from the basic nature of his compositions, since he specifically formulated his redispersible polymer powders to avoid the use of protective colloids, as disclosed in column 1, relying on non-ionic surfactants instead.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dr. Hans-Peter Weitzel

Dated: 2007/05/24